

TOC, Critical Chain, DevOps And My Learning Since 2005

Yoav Ziv, Head of Amdocs Testing Services

September 7, 2017



PRESENT: BUILDING ON SUCCESS 2017

**BREAKTHROUGH RESULTS FOR
GOVERNMENT AND BUSINESS**

Agenda

- 1 Amdocs @ a Glance
- 2 Time Travel To 2006
- 3 DevOps – The Enterprise Grade Issue
- 4 It All Comes Together
- 5 The Role Of Testing In The Journey

Amdocs @ A Glance

Market leader in customer experience solutions

\$3.7 billion revenue in 2016

Global company with **25,000+** professionals

Serving 300+ customers in more than **90 countries**

Unmatched project success in over 2,500 projects to date

Broadband
Technology Report
Diamond award



Asia Pacific
OSS/BSS vendor of
the year



Most innovative
technology provider



Leader in integrated
revenue and
customer
management

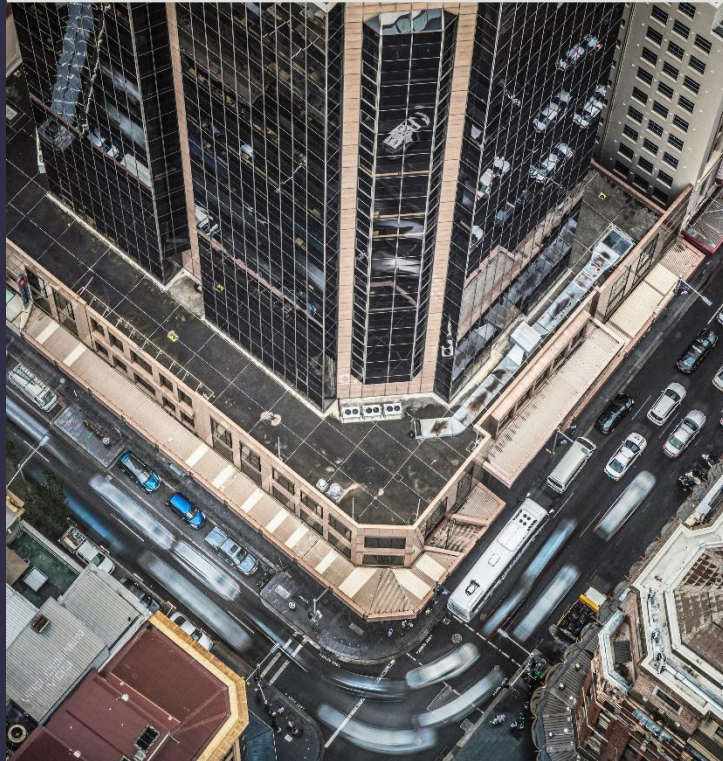


Our Customer's Challenge

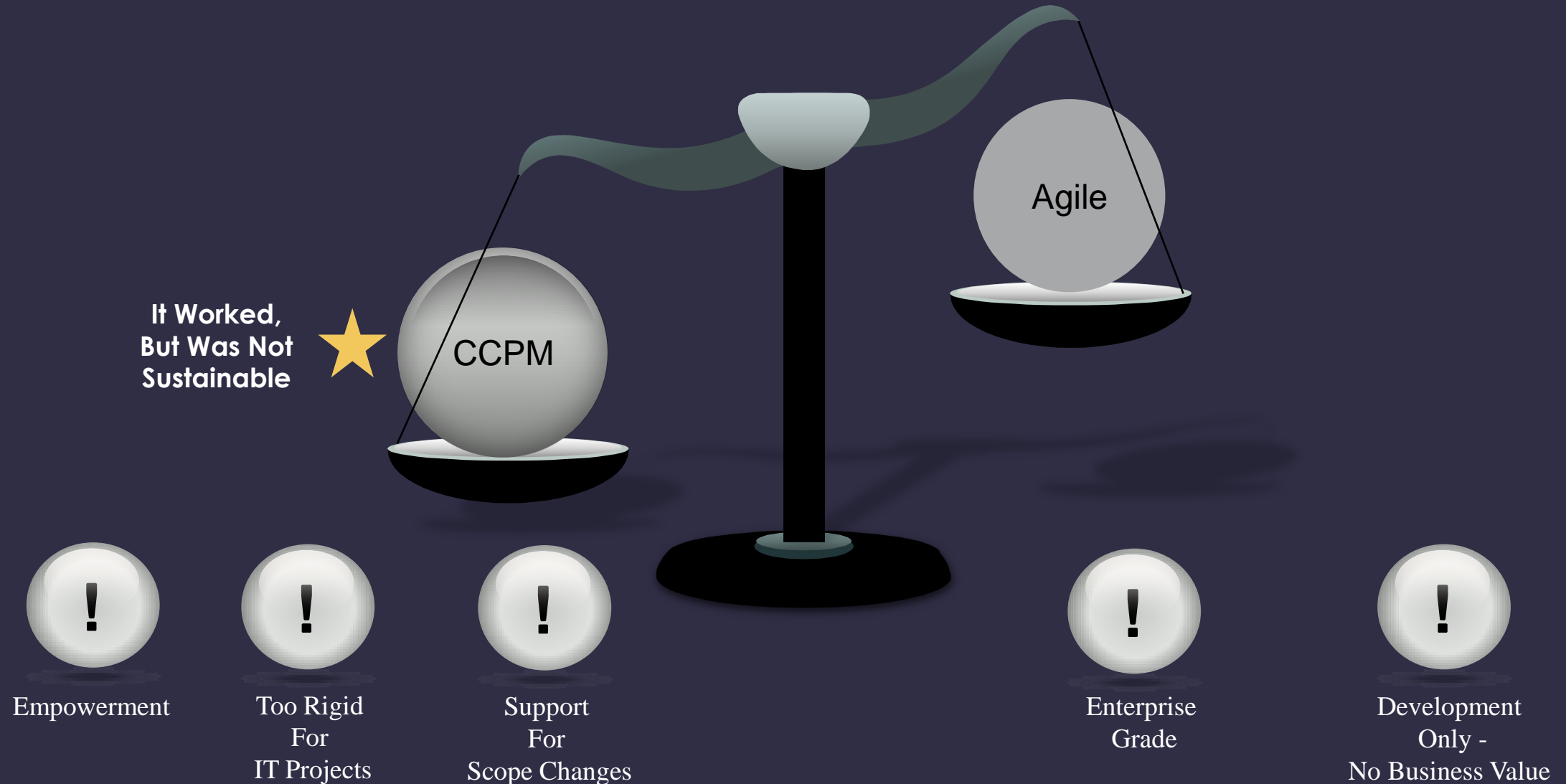
**Raise
the bar**



**Complex operating
environment**

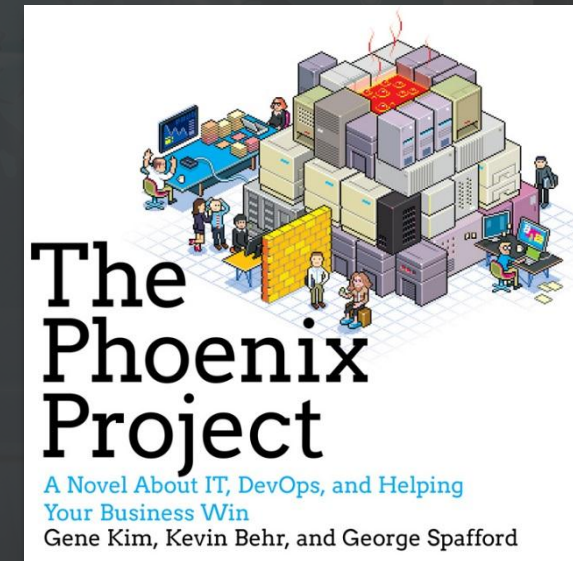


Time Travel 2006 - How To Solve The Synchronization Issue?

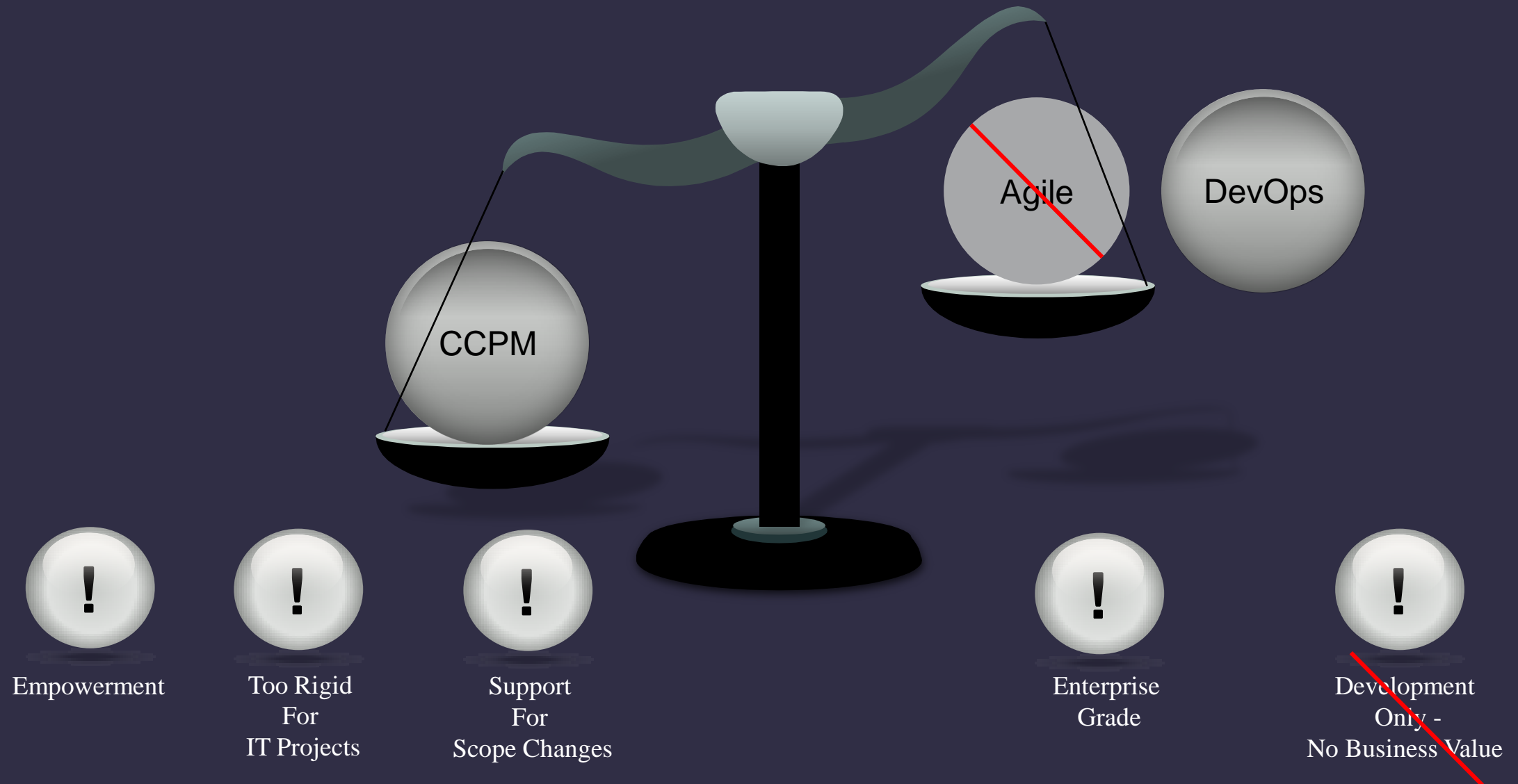


So... Everyone develops in Agile. What's The Problem?

“ Until **code** is in **production**, no **value** is actually being generated, because it's merely **WIP** stuck in the system ”

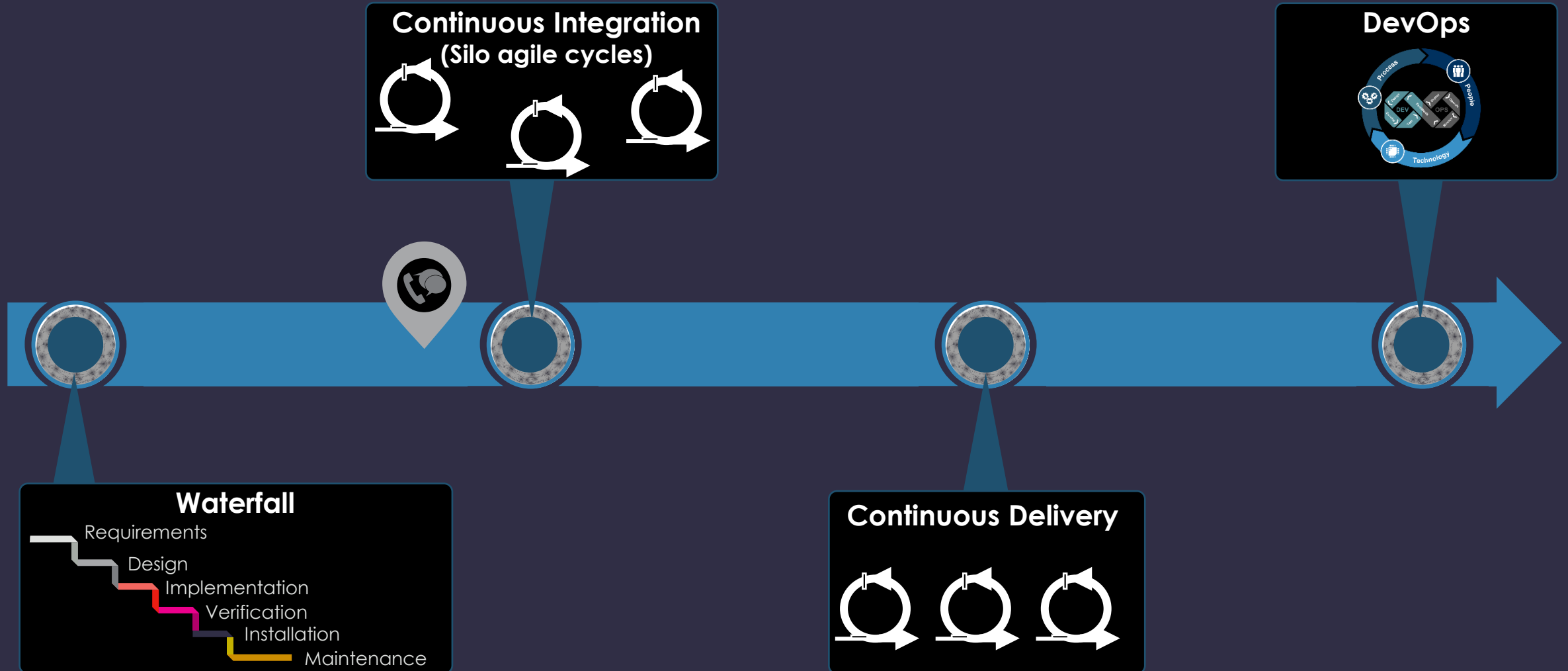


2017 - How To Solve The Synchronization Issue?



DevOps Journey

The Problem Remains – Enterprise (Carrier) Grade

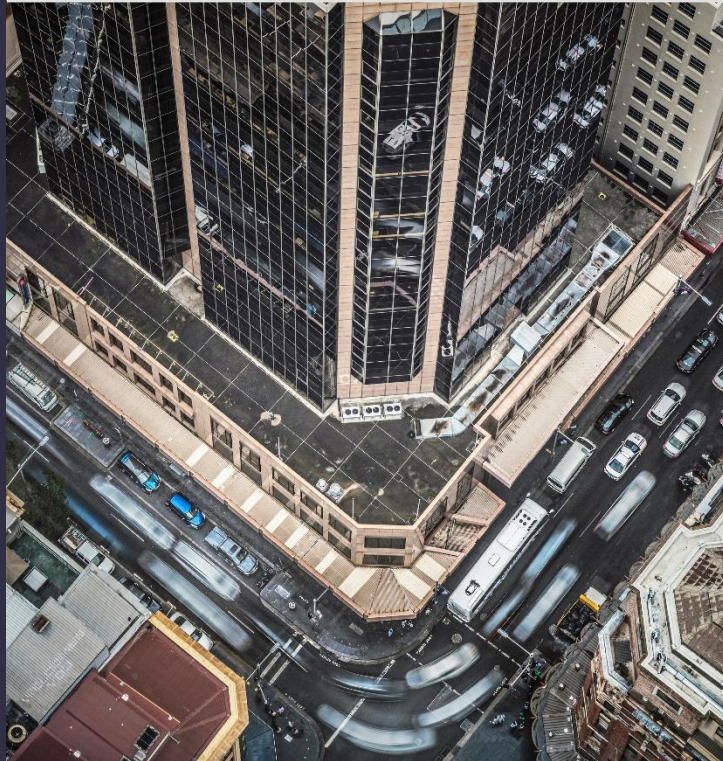


The Challenge

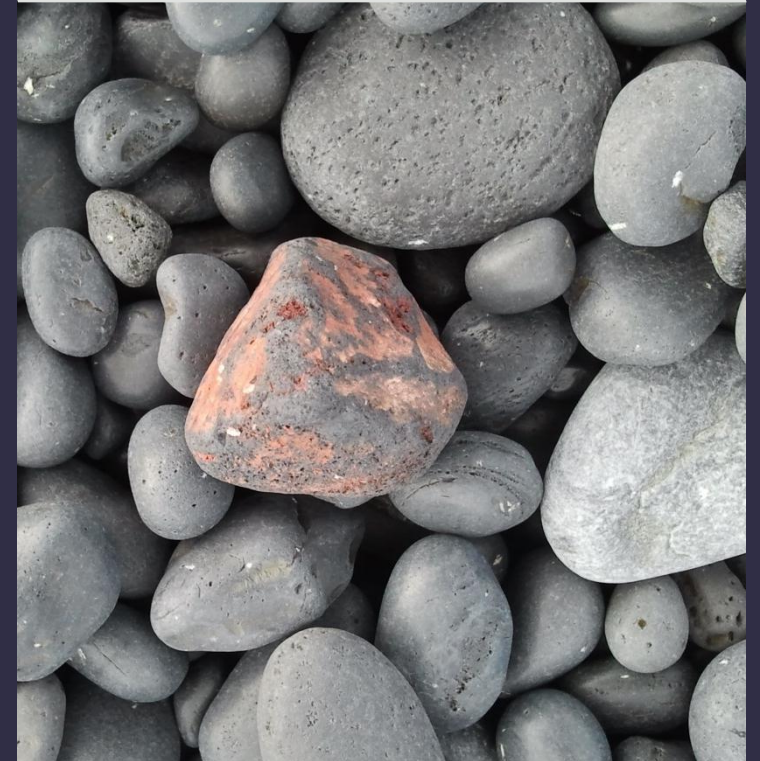
**Raise
the bar**



**Complex operating
environment**



**Standard DevOps
does not apply**

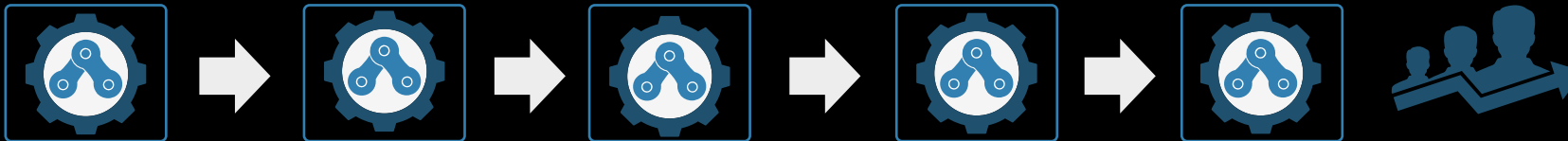


What is DevOps

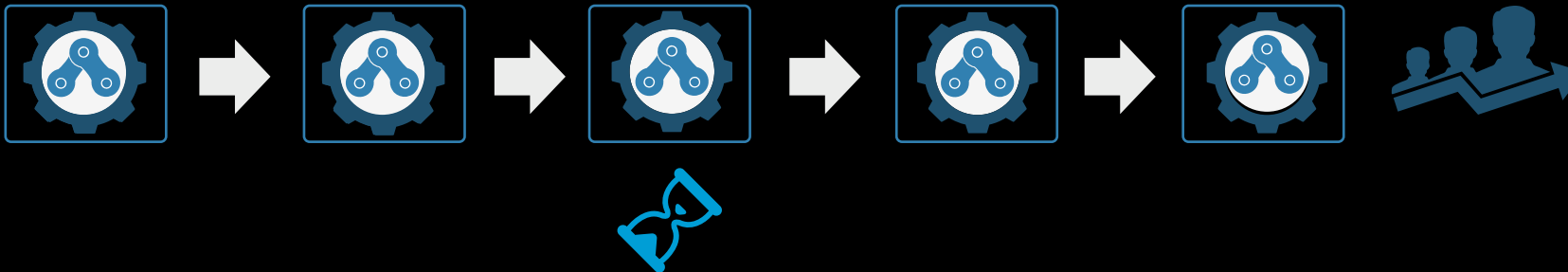
(And Why Testing Is So Important In The Journey)?

Provide the **RIGHT** value to the market **ASAP**

Basic Assembly Line – Single Piece Flow



DevOps – Maintain Single Piece Flow



Enterprise DevOps – Synchronized Single Piece Flow

The Phoenix Project

A Novel About IT, DevOps, and Helping Your Business Win
Gene Kim, Kevin Behr, and George Spafford

What Is The Unit That Flows Through? How To Define What's Valuable?

Development and Testing as Waterfall

Then We Moved To Agile

But If We Want To Achieve This

**Then Each Development Iteration Needs To
Create Something One Can Actually Test & Deploy**



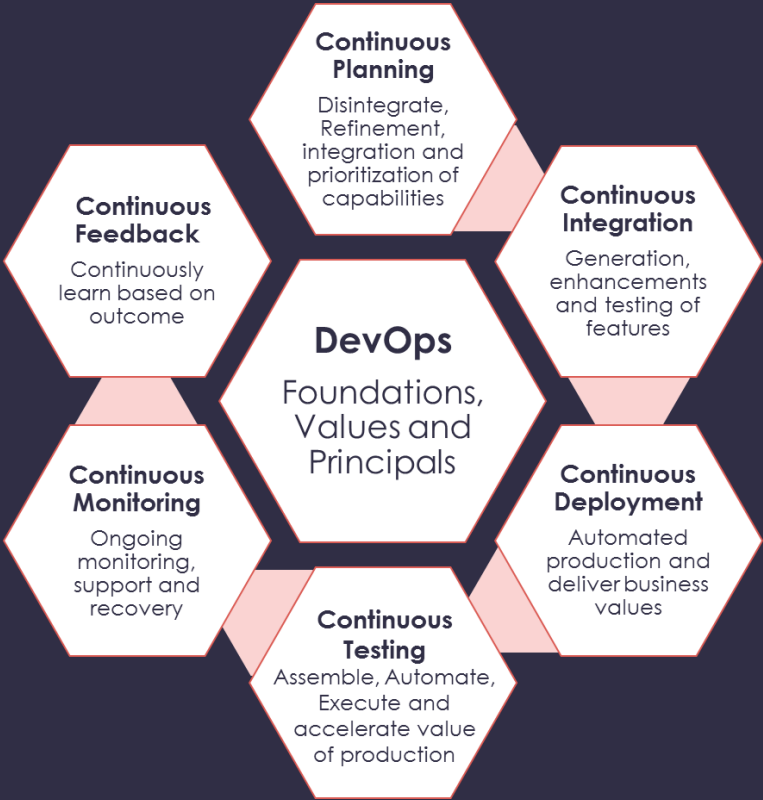
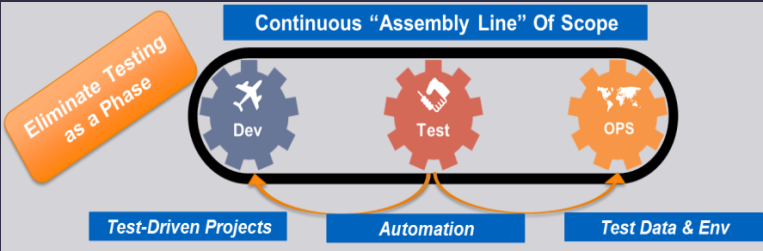
Amdocs DevOps DevOps Machine

We take an Innovative, practical approach to turn your release engine into a continuous feature assembly line

Continuous Feature (MTVs)
Assembly Lines

Synchronized Across
Systems / Vendors
/ Generations

Accelerated Through:



Automation



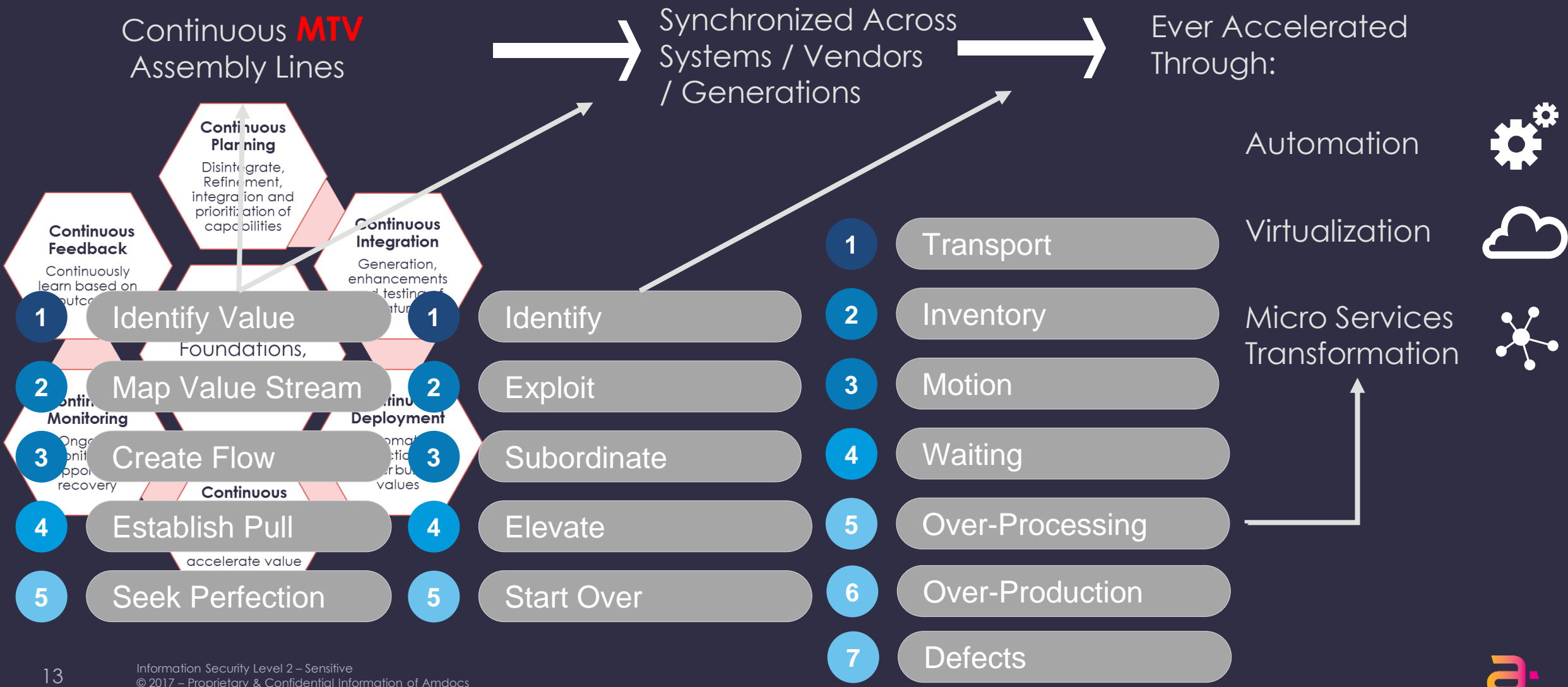
Virtualization



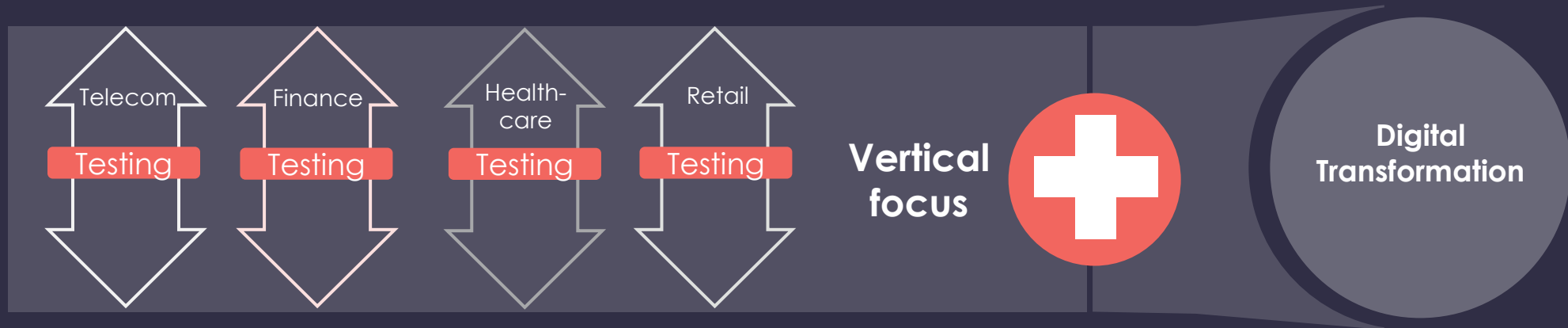
Micro Services
Transformation



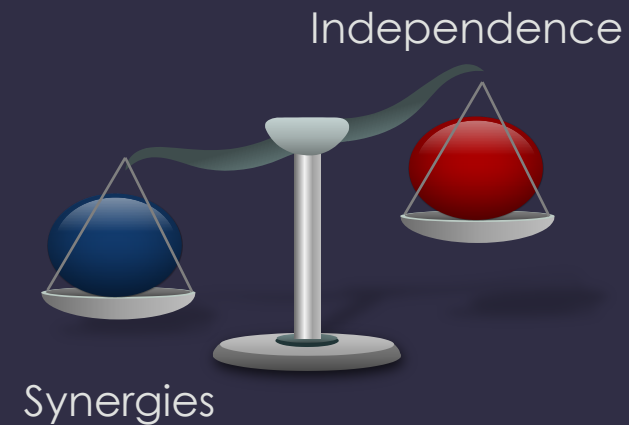
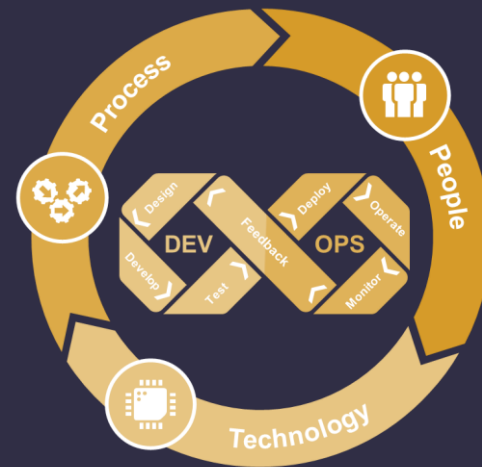
It All Comes Together: DevOps, Lean, TOC



The Role Of Testing In The Journey



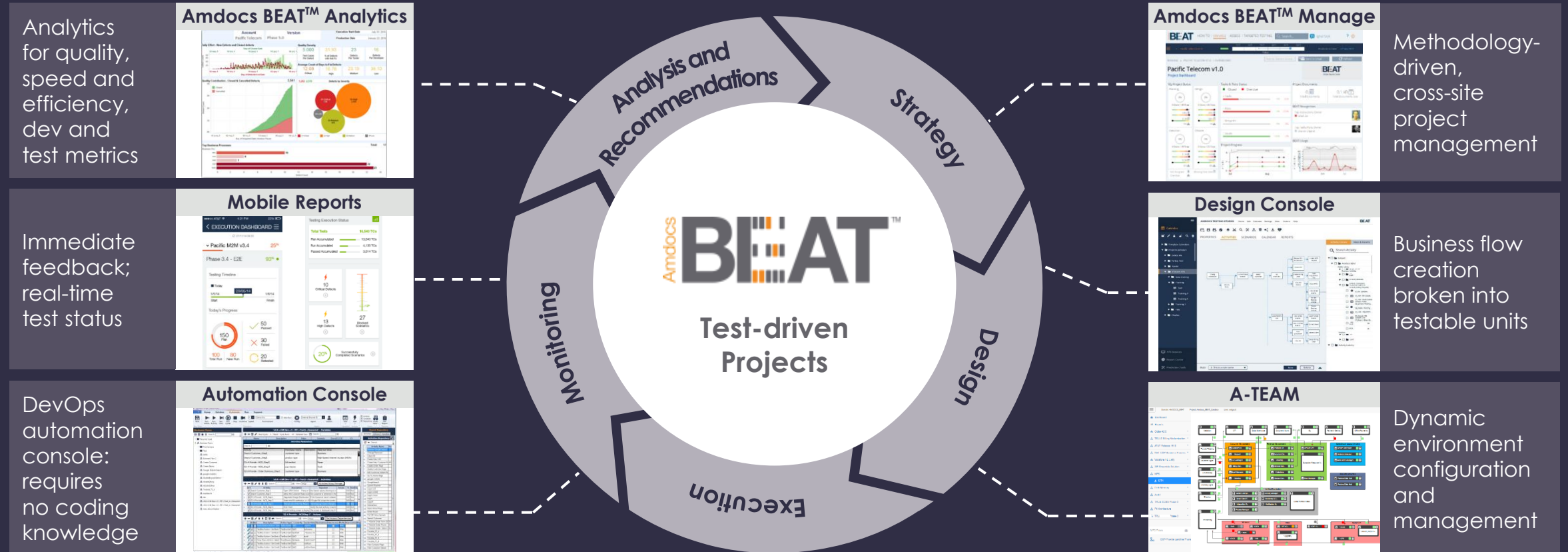
- Future-looking
- Innovation
- Data analysis
- Methodology
- Benchmark
- Design tools
- Expertise
- Automation



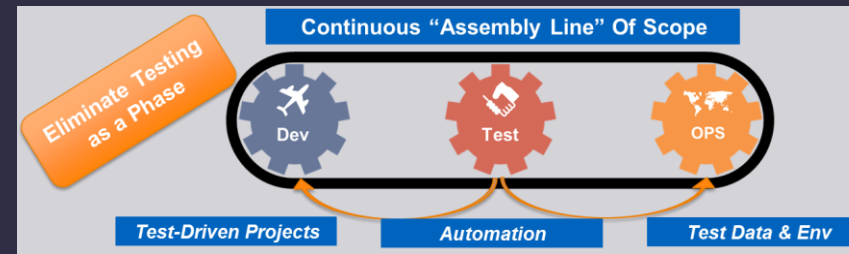
Innovative Technological Tools

Automating the entire testing lifecycle

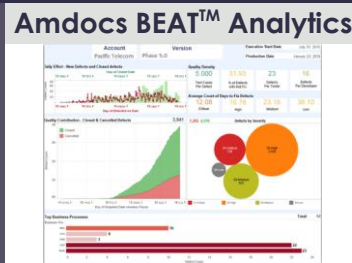
Amdocs BEAT™—automated E2E testing during development



Test-Driven-Projects: Enabling The Assembly Line



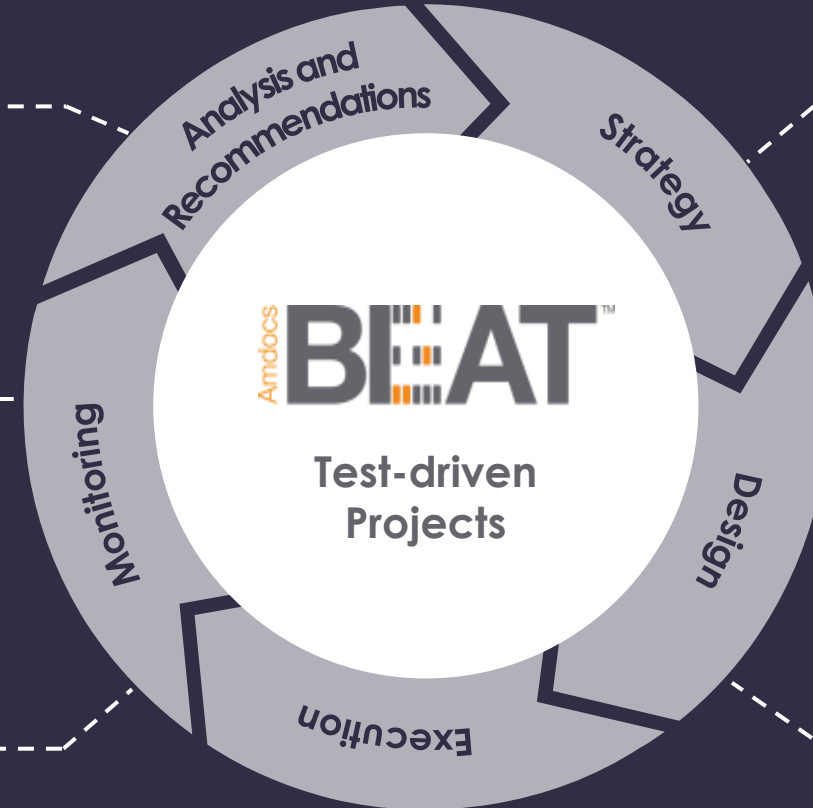
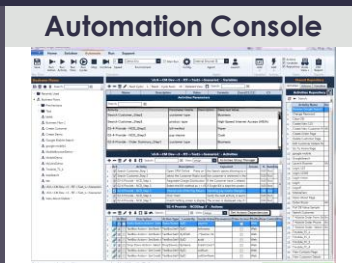
Analytics for quality, speed and efficiency, dev and test metrics



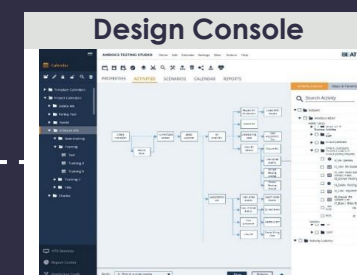
Immediate feedback; real-time test status



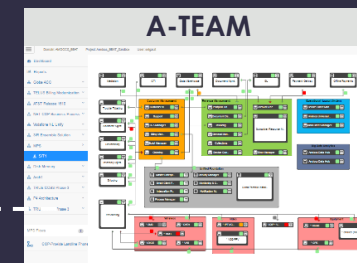
DevOps automation console: requires no coding knowledge



Methodology-driven, cross-site project management



Business flow creation broken into testable units

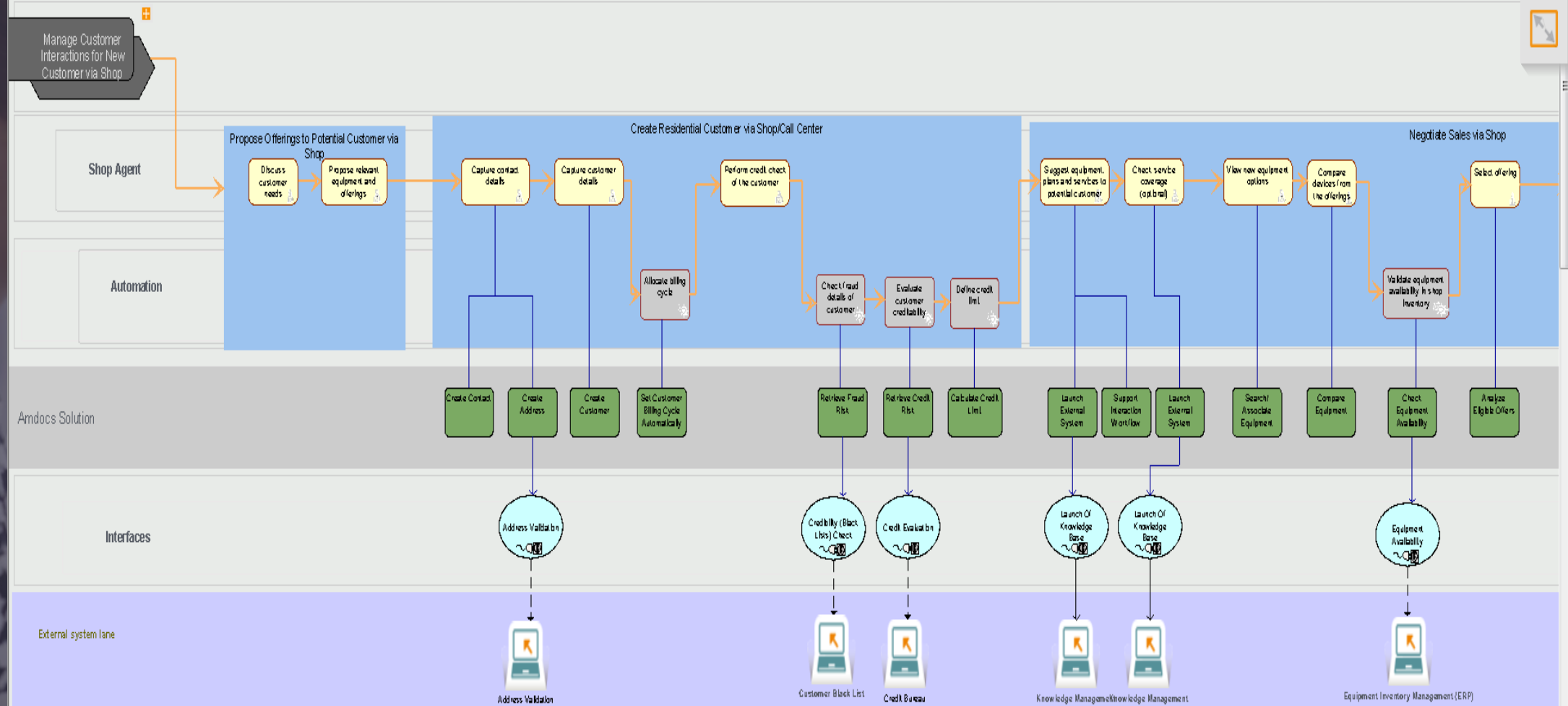


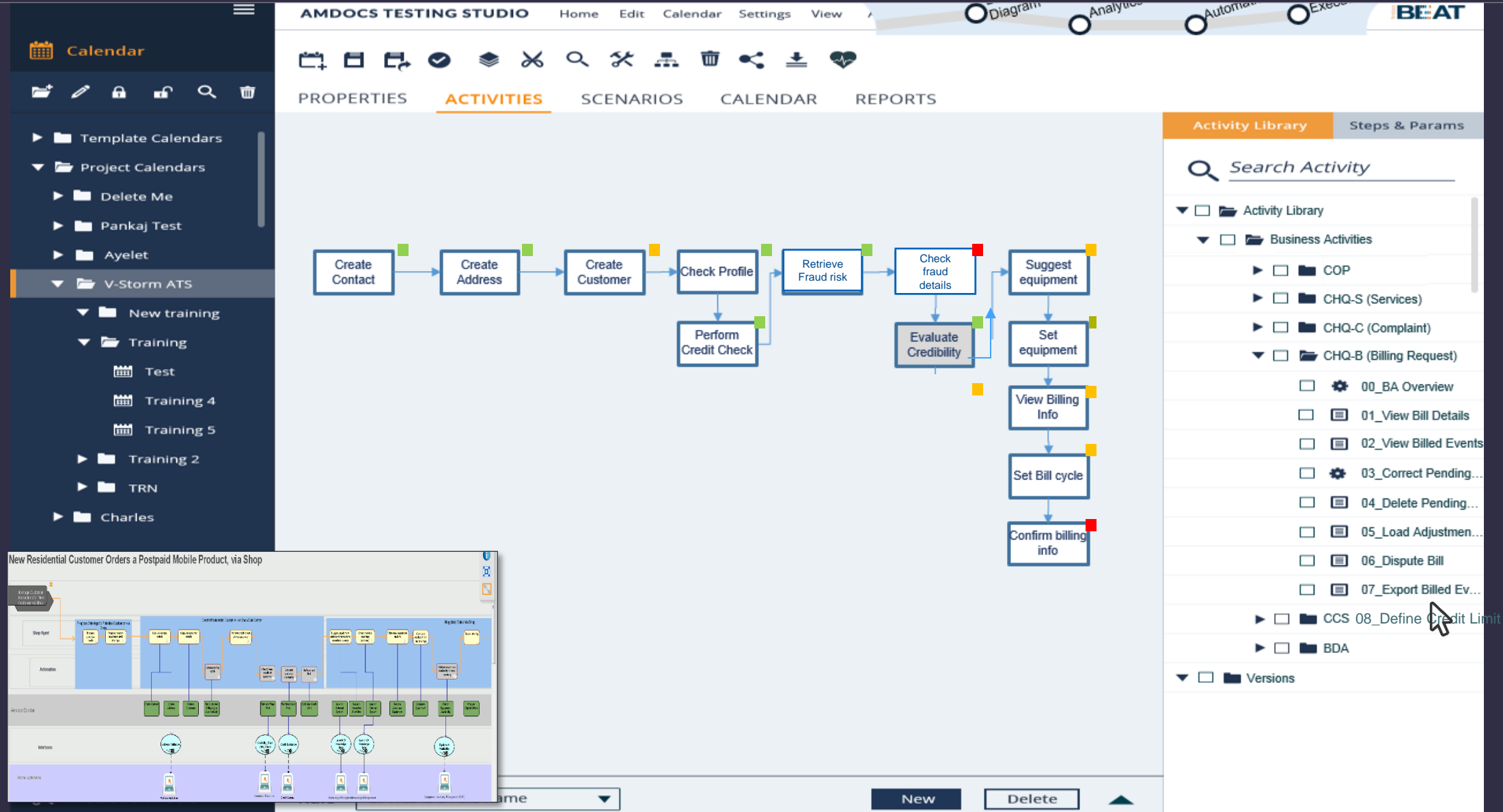
Dynamic environment configuration and management

Demo

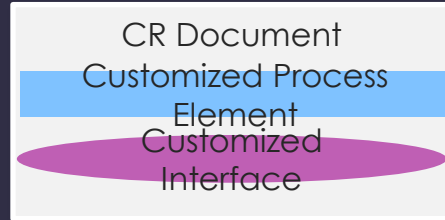


New Residential Customer Orders a Postpaid Mobile Product, via Shop

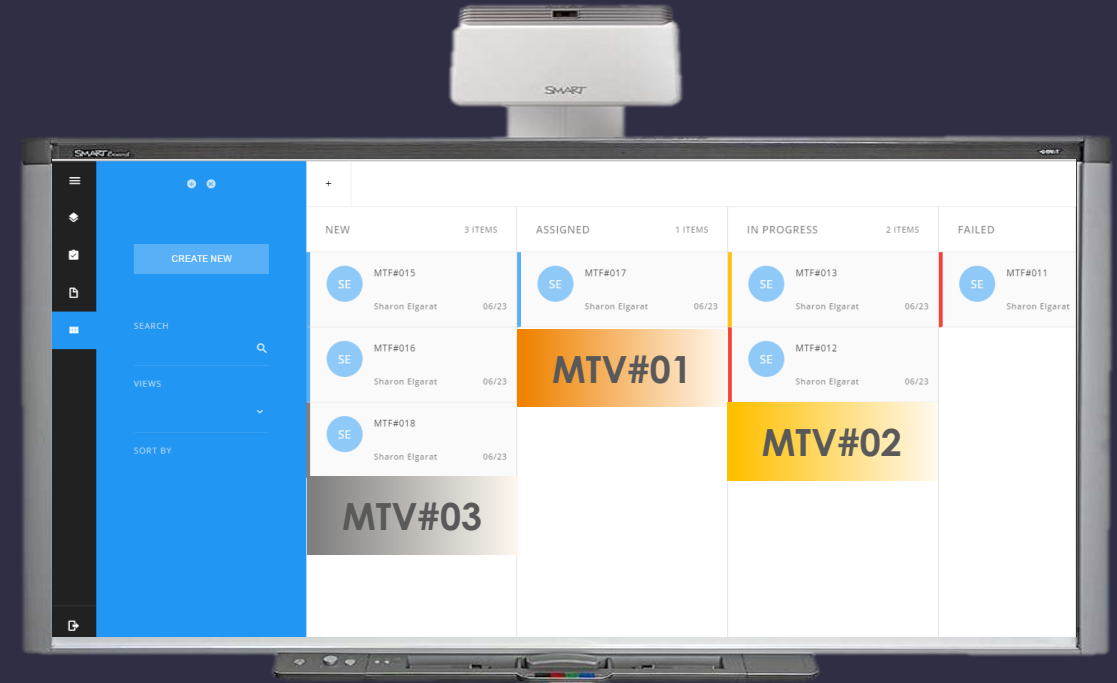
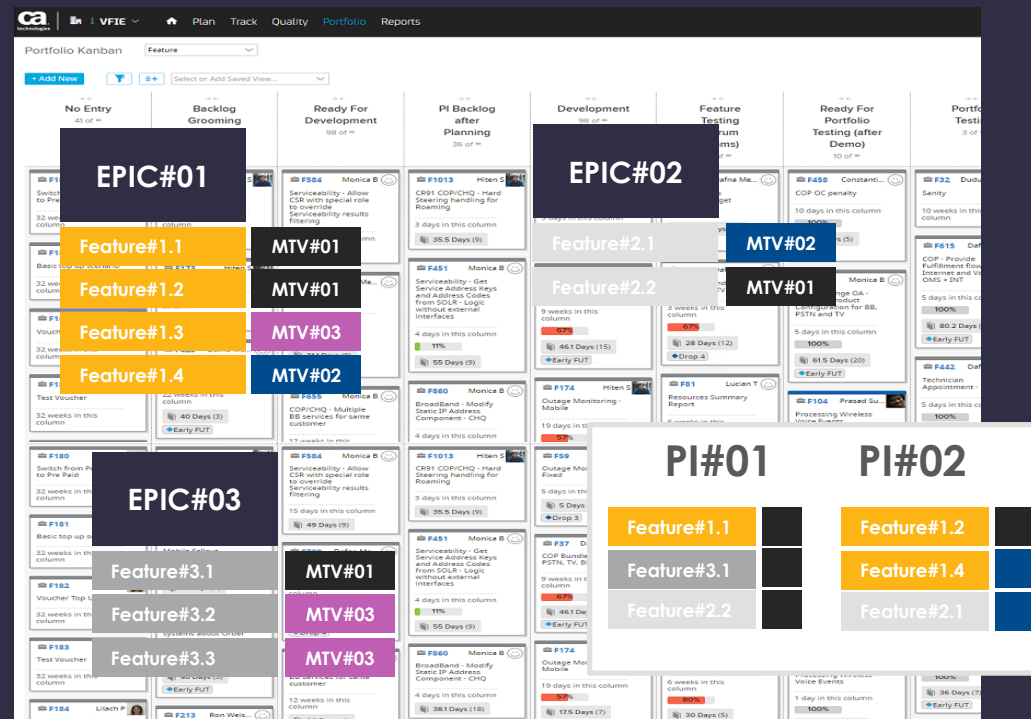




1. CRs submitted to dev & test



2. Dev define in Rally EPICs & features

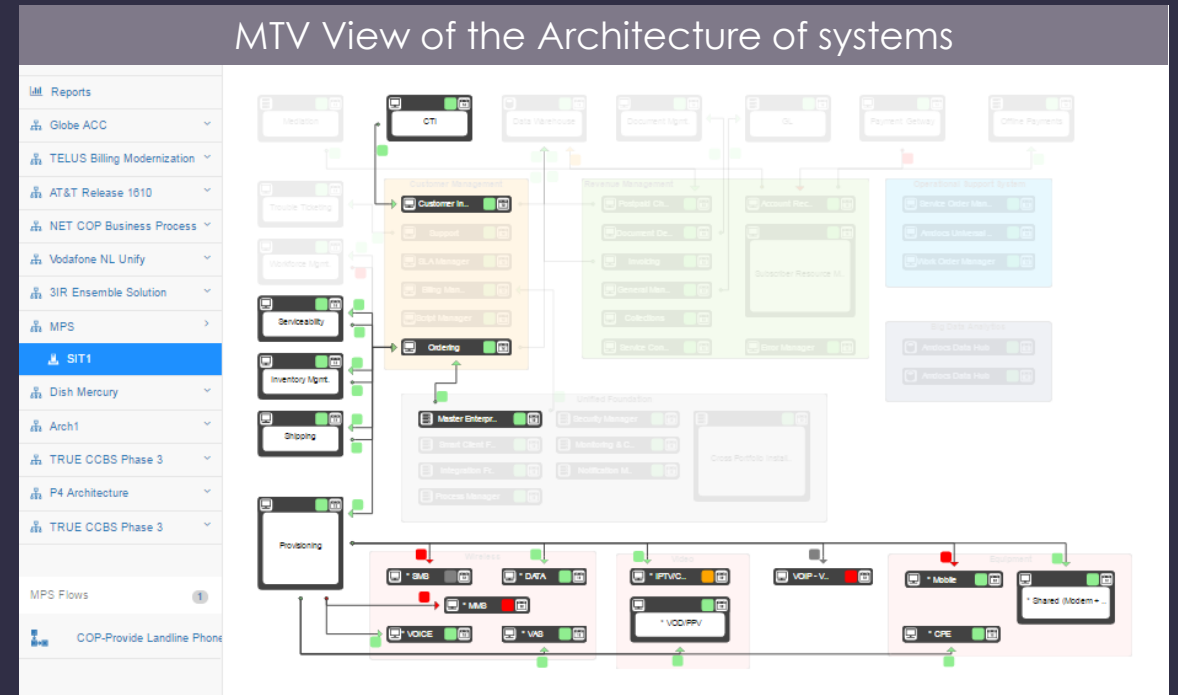
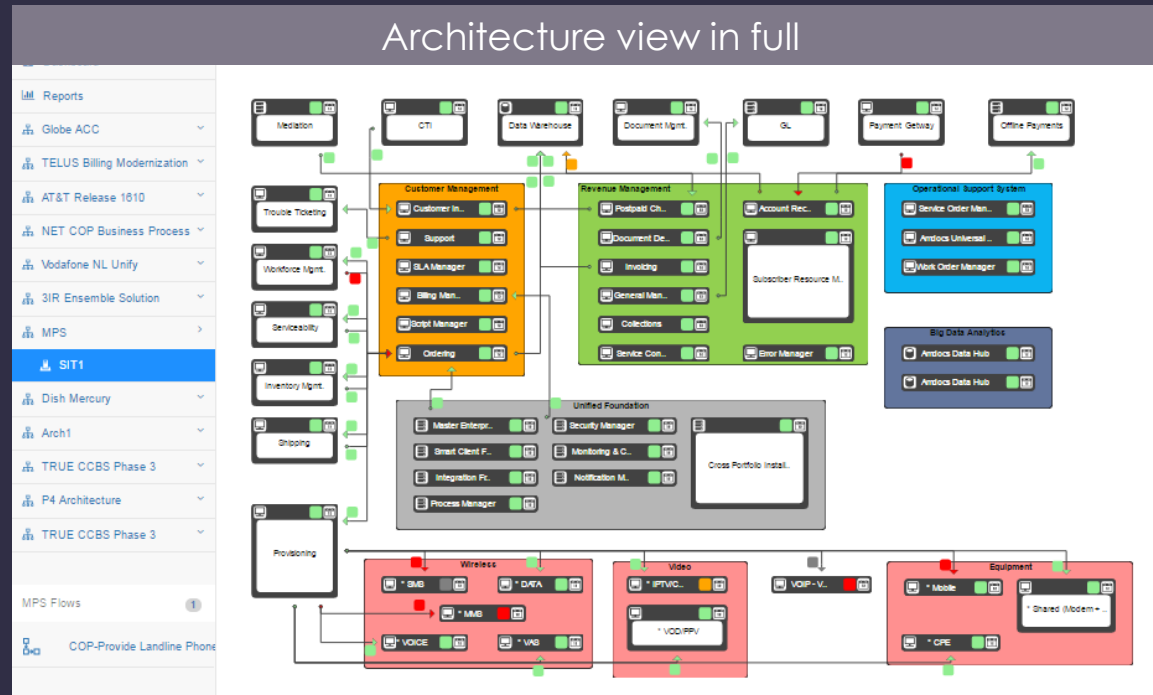


3. Test link MTVs from BEAT to features in Rally

4. Dev prioritize PIs targeting MTV's delivery



A-TEAM Environment Planner for an MTV



A-TEAM enables user to highlight applications and interfaces for only those required to test an MTV
It enables a focused sanity view and quick simulator definitions



```
1 JavaWindow("AT&T U-verse CRN Customer").JavaDialog("Message").JavaButton("Ok").Click
2 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaList("Spoken Language:").Select "Eng
3 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaList("Title:").Select "Ms.
4 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("First Name:").Set "Johny"
5 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("Last Name:").Set "Rose"
6 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaList("Authentication Question:").Sel
7 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("Authentication Answer:").Set
8 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("Email:").Set "jcr@amdocs.com"
9 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("Re-enter Email:").Set "jcr@amdocs.com"
10 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaList("Preferred Contact Node:").Sele
11 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaList("Preferred Contact Time:").Sele
12 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("html>House Num:").Set
13 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("html>Street Name:").Set
14 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("html>Thoroughfare:").Set
15 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaList("html>Street Suffix:").Set
16 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("html>Unit Type:").Set
17 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("html>Postal Code:").Set
18 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaList("html>Structure Type:").Set
19 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("html>Structure Type:").Set
20 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("html>City:").Set "Sasne"
21 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("html>City:").Set "Sasne"
22 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaList("html>State:").Select "AL"
23 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("html>Postal Code:").Set "75243"
24 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("SSN Number:").Set "123-45-6778"
25 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("SSN Number:").Set "123-45-6778"
26 JavaWindow("AT&T U-verse CRN Customer").JavaInternalFrame("Create Contact and Account").JavaEdit("SSN Number:").Set "123-45-6778"
27 JavaWindow("AT&T U-verse CRN Customer").JavaDialog("Problem").JavaButton("Ok").Click
```

Amdocs Ginger Automation

Home Solution Automate Run Support

Save Undo All Changes Analyzer Run Action Run Activity Run Flow Stop Continue Environment

Business Flow Execution

Application Agent SCM FF1

Configure Launch Window Explorer Grids View PDF Report Views Reports

'SCM - Create Customer 1'

Variables Activities Groups Activity-Variables

Activities

Active	Mandat	Name	Description	Expected	Screen/Compo	Variables	T. Application	Activities Group	Auto. Status
1		Goto SCM URL				SCM	0	Development	
2		Login				SCM	0	Development	
3		Select Customer Management				SCM	0	Development	
4		Create new customer				SCM	0	Development	
5		Verify Customer in DB				SCM	0	Development	

'Login' - Activity Actions

Active/Break	Description
1	Enter value in Username
2	Enter value in Password
3	Submit Page - login

Edit TextBox Action

Design Run Details

General Configurations:

Description Enter value in UserName

Wait: 0

Timeout:

☐ Take Screen Shot

Action Type Configurations

Action Type Configurations:

Locate By: ByID

Locate Value: UserName

Action Type

SetValue

Value Yaron

ca | VFIE | Plan Track Quality Portfolio Reports

Portfolio Kanban Feature

+ Add New Select or Add Saved View...

No Entry 41 of 98

Backlog Grooming 288 of 98

Ready For Development 98 of 98

PI Backlog after Planning 36 of 98

Development 98 of 98

Feature Testing (Scrum Teams) 4 of 98

Ready For Portfolio Testing (after Demo) 10 of 98

Portfolio Testing 3 of 98

F180 Lilach P Switch from Post Paid to Pre Paid 32 weeks in this column

F181 Lilach P Basic top up scenario 32 weeks in this column

F182 Lilach P Voucher Top Up 32 weeks in this column

F176 Hiten S Manually Manage Fallout 33 weeks in this column

F175 Hiten S Mobile Fallout 5 weeks in this column

F420 Dafna Me.. Notify external systems about Order 311 Days (9)

F304 Monica B Serviceability - Allow CSR with special role to override Serviceability results filtering 13 days in this column

F700 Dafna Me.. Cease PSTN for shared access 7 weeks in this column

F451 Monica B Serviceability - Get Service Address Keys and Address Codes from SQL - Logic without external interfaces 4 days in this column

F59 Hiten S Outage Monitoring - Fixed 5 days in this column

F37 Dafna Me.. COP Bundle 4P - PSTN, TV, BB, Mobile 9 weeks in this column

F463 Dafna Me.. Cease 3P Bundle - PSTN, BB, IPTV 3 weeks in this column

F482 Dafna Me.. Manage Credit 125.5 Days (19)

F450 Constant.. COP OC penalty 10 days in this column

F92 Monica B CHQ - Change OA - Wireline Product Configuration for BB, PSTN and TV 5 days in this column

F32 Dudi Semy 10 weeks in this column

F615 D... COP - Provide Fulfillment Flow Internet and V... QIGS - INT 5 days in this column

F442 D...

Calendar

Template Calendars

Project Calendars

Delete Me

Pankaj Test

Ayelet

V-Storm ATS

New training

Training

Test

Training 4

Training 5

Training 2

TRN

Charles

ATS Services

Report Center

Prediction Tools

AMDOCS TESTING STUDIO

Home Edit Calendar Settings View

BP Diagram Analytics Automation Execution

BEAT

PROPERTIES ACTIVITIES SCENARIOS CALENDAR REPORTS

80% Flow 1 (3)

+ New Scenario

70% SCN#01

90% SCN#02

75% SCN#03

50% Flow 2 (2)

+ New Scenario

100% Flow 3 (1)

+ New Scenario

Create Interaction

Authenticate contact

Select Customer

BA Overview

Request Bill On Demand

Accept BOD request

User Type

Interaction Type

Authorization

Customer Type

Hierarchy

History

Request Type

Request Level

Bill Type

BOD Status

Front Office CSR

Inbound Call

Authorized

Business

Single FA/BA

First Month

Regular BOD

Customer

Electronic

Approved

Back Office CSR

Inbound SMS

Authorized

Corporate

Multi BAs

Converted Bills

Regular BOD

BA

Paper

Approved

Front Office CSR

Inbound SMS

Authorized

Residential

Multi FAs

First Month

Final BOD

Customer

SMS

Recycled

90%

100%

80%

90%

100%

40%

100%

100%

100%

100%

100%

100%



A-TEAM Environment Booking for an MTV

The screenshot displays the A-Team Windows Client interface. The main workspace shows a complex flowchart with various modules and data flows. A 'Group Booking' dialog box is open in the center, showing a date range from 1.1.2017 to 31.1.2017. The dialog has a 'BOOK' button and a 'CANCEL' button. On the right side, there is a 'Filter By' section with a table of pending bookings.

ID	Name	User Name	Role	From Date	To Date
1748	Inventory Mgmt.	selgarat	Unknown	01/01/2017	01/31/2017
1749	Serviceability	selgarat	Unknown	01/01/2017	01/31/2017
1750	Provisioning	selgarat	Unknown	01/01/2017	01/31/2017
1752	Shipping	selgarat	Unknown	01/01/2017	01/31/2017
1753	CTI	selgarat	Unknown	01/01/2017	01/31/2017
1755	Customer Interaction	selgarat	Unknown	01/01/2017	01/31/2017
1762	Ordering	selgarat	Unknown	01/01/2017	01/31/2017
1784	Master Enterprise Catalog	selgarat	Unknown	01/01/2017	01/31/2017

AMDOCS TESTING STUDIO Home Edit Calendar Settings View

Interaction Home [1]

Current Interaction Details:

Type: **Telefoon** No Run
Media: **NVT** Channel: **NVT**

Current Topics

Reason 1	Reason 2	Result	Linked To
Specificeer	Specificeer	Geen	Please Select

Quick Actions Action Item Case Literature Request Opportunity Quote Order Outbound Comms

Contact Information Account Information Billing Items Subscriptions Collection FA Billing Summary Outbound Communications

Full Name: Dhr. Anonymous Caller Preferred Name: Phone: (000)000-0000 Email: Password:

Role: Default Preferred Contact Time: Preferred Contact Method: Alternate Contact Methods: 0 View Details

Interaction

Search Now Show All

Flow Diagram

Table

Title	Media	Direction	CTN/Resource

View All 0 Records

The screenshot displays the AMDOCS TESTING STUDIO interface, which is used for managing and executing test scenarios. The interface is divided into several sections:

- Top Bar:** Contains the application name "AMDOCS TESTING STUDIO" and navigation tabs for "Home", "Edit", "Calendar", "Settings", and "View".
- Left Sidebar:**
 - Calendar:** A section for managing calendars, including "Template Calendars", "Project Calendars", "Delete All", "Plinky Test", and "Anytest".
 - V-Stream-ATS:** A section for managing test scenarios, including "New training", "Training", "Test", "Training 4", "Training 5", "Training 2", "Test", and "Charts".
 - ATS Services:** A section for managing services, including "Report Center" and "Prediction Tools".
- Main Content Area:**
 - Properties, Activities, SCENARIOS, CALENDAR, REPORTS:** A set of tabs for managing different aspects of the test scenarios.
 - Flow 1 (3):** A section for managing the first flow, which includes a "New Scenario" button and a table of scenarios.

Scenario	Step	Value	Percentage
SCHW01	Create Interaction	Front Office CSR	90%
	Interaction Type	Inbound Call	90%
	Authentication	Authorized	100%
SCHW02	Create Interaction	Back Office CSR	90%
	Interaction Type	Inbound SMS	90%
	Authentication	Authorized	100%
SCHW03	Create Interaction	Front Office CSR	100%
	Interaction Type	Inbound SMS	100%
	Authentication	Authorized	100%
 - Flow 2 (2):** A section for managing the second flow, which includes a "New Scenario" button and a table of scenarios.

Scenario	Step	Value	Percentage
SCHW04	Create Interaction	Residential	90%
	Interaction Type	Mobile	90%
	Authentication	Authorized	100%
SCHW05	Create Interaction	Corporate	90%
	Interaction Type	Mobile	90%
	Authentication	Authorized	100%
SCHW06	Create Interaction	Business	90%
	Interaction Type	Mobile	90%
	Authentication	Authorized	100%
- Right Panel:** A section for managing test scenarios, including "Targeted Testing Algorithms", "Reverse Algorithms", and "Full Values Matrix".

AMDOCS TESTING STUDIO Home Edit Calendar Settings View

BP Diagram Analytics Automation Execution

Targeted Testing Algorithm
Pairwise Algorithm
Full Values Matrix

PROPERTIES ACTIVITIES **SCENARIOS** CALENDAR REPORTS

Flow 1 (3) 82% **Flow 2 (2)** 30%

+ New Scenario

Scenario	SCN#01	SCN#02	SCN#03
Create Interaction	70%	96%	76%
User Type	Front Office CSR	Back Office CSR	Front Office CSR
Interaction Type	Inbound Call	Inbound SMS	Inbound SMS
Authenticate contact	Authorized	Authorized	Authorized
Select Customer	Business	Corporate	Residential
Hierarchy	Single FA/BA	Multi BAs	Multi FAs
BA Overview	First Month	Converted Bills	First Month
Request Bill On Demand	Regular BOD	Regular BOD	Final BOD
Request Level	Customer	BA	Customer
Bill Type	Electronic	Paper	SMS
Accept BOD request	Approved	Approved	Recycled

ATS Services
Report Center
Prediction Tools

A-TEAM Marks MTV as “Passed”

